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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,605

09/23/2005

Frank Forster

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EXAMINER

PHAM, HOA Q

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/521,605	Applicant(s) FORSTER ET AL.	
	Examiner Hoa Q. Pham	Art Unit 2886	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/18/05, 5/18/05</u> | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 5/18/05 has been considered and the references listed on the IDS filed 1/18/05 have been "crossed-off" because they repeated from IDS filed on 5/18/05.

Drawings

3. Drawings filed on 1/18/05 have been approved.

Specification

4. Applicant is noted that the "abstract" filed with the PCT application (WO/2004/010076 A1) will be used for this application.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(f) he did not himself invent the subject matter sought to be patented.

6. Claims 1-14, 16-20 are rejected under 35 U.S.C. 102(a) as being anticipated by Forster et al ("Real-Time Range Imaging for Dynamic Scenes Using Colour-Edge Based Structured Light", Vol. 3, pp. 645-648).

Regarding claims 1, 6-7 and 12, Forster et al discloses a method for the 3D detection of an object by way of structured light. In this case, a projector is used to project a color pattern containing a redundant code with known projection data onto the surface of an object, and the object with the color pattern projected thereon is recorded by a camera from a direction deviating from the projection direction. By decoding the color pattern at each pixel of the camera image, it is possible to determine the associated three dimensional coordinates of the object surface by way of triangulation. This method permits the reconstruction of the partial region of the surface of the object with a video image (see figure 1).

Regarding claims 2-5, 9 and 17-20, see page 646, left column, paragraph 2.1, for the use of crossword.

Regarding claims 8, 10-11, 13, see page 647, left column, paragraph 2.4, for the use of colour channels.

Regarding claim 14, claim 14 discloses a device which depends on method claim 1, therefore, a patentable weight is not given and is rejected with respect to method claim 1.

Regarding claim 16, see figure 3 and page 647-648, paragraph 3.

7. Claims 1-20 are rejected under 35 U.S.C. 102(f) because the applicant did not invent the claimed subject matter. The subject matter claimed in this application is identical to the subject matter disclosed in the article of Forster et al ("Real-Time Range Imaging for Dynamic Scenes Using Colour-Edge Based Structured Light", Vol. 3, pp. 645-648). There are two inventors (Manfred Lang and Bernd Radig) in this article who are not in this application and there are two inventors (christian Hoffmann and peter Rummel) in this application are not in the article. Therefore, it is not clear who the inventors are. See MPEP 2137 35 U.S.C 102 (f).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forster et al.

Forster et al teaches the step of recognizing the gestures of a hand and does not teach the step of recognizing the faces of people; however, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the basic device of Forster et al for recognizing the faces of people instead of hands because the device would function in the same manner.

10. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffmann (DE-19963333 A1) (of record) in view of Wang (US 5,912,644).

Regarding claims 1, 6-8 and 10-13; Hoffmann discloses a method for detecting surface coordinates in three dimensions by means of two-dimensional coded color pattern (abstract), the color pattern contains repeated sequences (column 3, line 23 and figure 2). Hoffmann does not teach that the projection data in a color pattern is encoded with the aid of a redundant code; however, such a feature is known in the art as taught by Wang. Wang teaches the use of redundant codes that can be transmitted in the data and checked in the receiver to make sure that data is received correctly (column 32, lines 23-31). It would have been obvious to one having ordinary skill in the art at the time the invention was made to encode the projection data of Hoffmann with the aid of a redundant code taught by Wang to avoid the interference occurs between the receivers as suggested by Wang.

Regarding claims 2-5, 9 and 17-20, using crosswords for redundant code within the color channels is well known in the art; thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the redundant code of Wang by crosswords for the same purpose.

Regarding claim 14, claim 14 discloses a device which depends on method claim 1, therefore, a patentable weight is not given and is rejected with respect to method claim 1.

Regarding claims 15-16, Hoffmann does not teach the step of recognizing the faces of people; however, it would have been obvious to one having ordinary skill in

the art at the time the invention was made to use the basic device of Hoffmann for recognizing the faces of people instead of object (3) because the device would function in the same manner.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Following reference relates to an imaging system for imaging an object: Li et al 97,092,014), Doemens et al (2005/0068544), Forster et al (7,230,694) and Hoffmann (2003/0002052).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa Q. Pham whose telephone number is (571) 272-2426. The examiner can normally be reached on Monday through Friday, 8:00AM TO 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on (571) 272-2287. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Hoa Q. Pham
Primary Examiner
Art Unit 2886

HP
August 1, 2007